Paper/Work
LLNL Postdoc Association Newsletter
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Postdocs Explore Local Nightlife at the Postdoc Association Holiday Party

By Andre Schleife

December 9th was a cold night, but many brave postdocs and some of their partners and friends followed the invitation of the LLPA and used this evening for an excursion to the Sanctuary Ultra Lounge and Restaurant in downtown Livermore. When the first representatives of this expedition arrived at the lounge around 5.30 PM, they found a nice and comfy location along with a very motivated, funny, and talkative server. Gentle music was playing in the background and there was enough space to host everyone – an ideal start for our Winter Holiday Party.

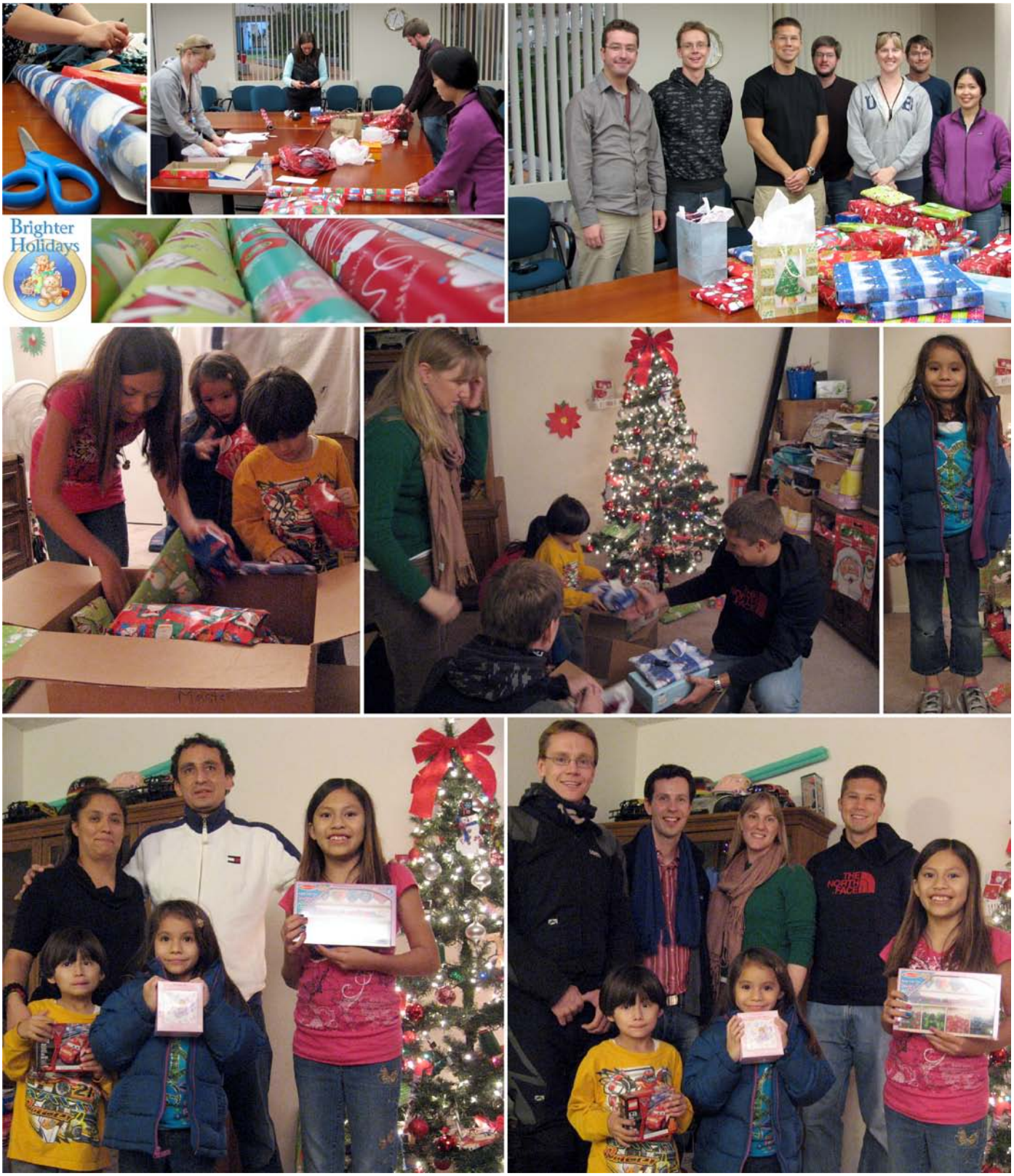
As time went by more and more postdocs transferred from the Lab to the Lounge, claiming additional available chairs and tables and adding them to the growing Lab-occupied space. Our group enjoyed ourselves talking, joking, eating, and trying to adjust the ratio "words spoken by the server"/"drinks delivered by the server" a little off its initial value of infinity. By around 8 PM a total of 25 postdocs had gathered and were spending an enjoyable Friday night making new contacts and refreshing old ones.

Everyone had a good time getting into the holiday mood. By about 11 PM, the excursion came to an end with people heading out and keeping good memories of a nice party. Postdocs, we hope to see you out again soon!

Editor's note: we are very sorry to report that one postdoc had their wallet stolen after it was left unattended in a coat pocket during the party. Please remember that it is always wise to keep valuables with you, especially for off-site events in public spaces. Unfortunately, the rest of Livermore isn't as secure as the Lab!

Postdocs Made Brighter Holidays a Huge Success

Thanks to you, we raised over $950 to help out a needy family of five in Livermore. The gifts were wrapped up at our wrapping party and later delivered on December 20th by Andre, Sarah, Nathan, and Lance. We can't begin to tell you how happy the family was to receive the gifts—they were so sweet and grateful!



Next Steps: Interviews with Former Postdocs

Heather Whitley was a postdoc until August 2010 and has since transitioned to a career position within LLNL.

Where do you work now and how is that similar or different from what you did as a Post-Doc?
As of October 2011, I'm a design physicist in AX Division. I was a postdoc in the Quantum Simulations Group in CMMD and then I spent one year as a flex-term in that group. Since I am still at the lab and only recently transferred to AX, there hasn't been a big difference in my work environment or culture.

Did you apply elsewhere? Why did you make this choice (Lab vs. academia vs. industry)?
By the last year of my Ph.D. I was pretty certain that I wanted to leave academia. I talked to some people from industry and consulting firms in addition to people from the NNSA labs at job fairs at my university. By the time that I was being asked to interview for industrial positions, I had decided that I wanted to do a postdoc and publish papers just in case I decided to go back to academia. I saw the labs as a step away from academia without leaving behind peer-reviewed scientific R&D, which was attractive to me. During my postdoc I found the environment to be very stimulating. I enjoyed working on problems that were closer to real-world applications than what I had done during graduate school, and I found myself surrounded by a number of very intelligent people. These factors and the lab's role in national security contributed to my decision to continue my career here.

What did you enjoy the most and the least about being a PD at LLNL? What do you think are the differences between a PD at the lab versus at a University?
At the lab our work tends to be more applied in many cases than what is done at universities. There are also many opportunities to participate in large interdisciplinary teams, whereas many academic researchers work in smaller groups within a single discipline.

How far along your PD were you when you decided what the next step in your career would be?
Within about 6 months of coming to the lab I had decided that I'd like to stay here if the opportunity were to arise. I knew that the funding that was paying for my postdoc would not cover me beyond the 3-year term, so I started looking for other funding opportunities almost immediately.

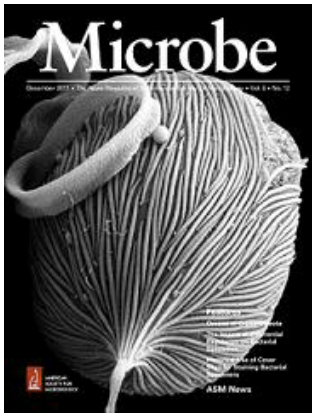
How did you get your new job?
As a postdoc wanting to stay at the lab, I started looking for opportunities to get involved in projects that had sustainable funding. At a brown bag lunch sponsored by the IPPB, Frank Graziani gave a presentation where he mentioned that he was leading an effort to use molecular dynamics to study the microphysics of dense plasmas. Part of this effort was developing models for incorporating the quantum mechanical behavior of electrons into a classical simulation. Given my background in theoretical chemistry, this sounded like something where I could make a contribution. I spoke with Frank after the brown bag and he invited me to attend the meetings for that project. I gradually became involved in his project and was converted to flex to continue working with his group beyond my postdoc.

As for my current position, at some point Frank mentioned that WCI had numerous job openings to me and some other limited term members of our team. I spoke with a number of people from both AX and B Divisions and some of my managers in PLS before I even applied for the job in WCI. I had also already been interacting with Paul Miller and a number of other people from AX due to my involvement in Frank's project, so there was already some familiarity with my work. I think this is why I was asked to interview. I had a formal interview in July, which consisted of giving a talk on my work and subsequently meeting with a number of group leaders and other managers from WCI. After I was offered the job, I decided to make the move over to WCI because I found the science fascinating and I felt it would be a good step in continuing my development as scientist and as a member of the LLNL community.

Do you have any piece of advice for PDs at LLNL?
Aside from the usual advice that you should focus on your research and publish papers, I think it's also important to actively engage in the scientific community. Participating in discussions with people both inside and outside of your immediate work group at the lab is a good way to take advantage of the high concentration of scientific creativity and expertise that exists here. Learning about fields beyond your own will enhance your ability to propose new research as your career progresses, and you may find opportunities to continue your career within the lab.

Postdoc-Related Highlights from Notes to the Director

Protist image featured on the cover of the journal *Microbe*



A scanning electron micrograph of a protist recorded by LLNL postdoc Kevin Carpenter is featured on the December 2011 cover of the journal *Microbe*. The corresponding article by Yana Eglit of Indiana University and Moselio Schaechter of San Diego State University and the University of California at San Diego is entitled "A Protist Wonderland." It demystifies protists and their role in the global ecosystem we live in. Protists, a diverse collection of single- and multi-cellular microorganisms, are responsible for half of all photosynthesis on the planet, play a major role in natural cycling of carbon and nutrients, and can cause debilitating illnesses. Their apparent organizational simplicity belies their structural and genomic complexity; for instance, some protists have genomes that are two orders of magnitude larger than the human genome. Carpenter's LDRD-funded research focuses on the often-symbiotic relationship between protists and bacteria.

Team receives Best Poster/Presentation Award

At the recent 2011 Materials Research Society (MRS) Fall Meeting and Exhibit held in Boston, MA, members of LLNL's Disruptive Fabrication Technologies Initiative team received the Best Poster/Presentation award in the Advances in Energetic Materials Research symposium. Primary author of the poster, titled "Direct-Write Assembly of Micro-Energetic Materials," was David Kolesky, a student academic collaborator for the team at the University of Illinois, Urbana-Champaign. Other Engineering coauthors included Eric Duoss, Cheng Zhu (LLNL postdoc), Andrew Pascall (LLNL postdoc), and Chris Spadaccini.

Notes from the Postdoc Association Council Meeting on January 4th

Start 12:00 PM, West Cafeteria. Attendees: Andrii Chyzh, Andre Schleife, Tanim Islam, Christine Zachow, Liam Stanton, Lance Simms, Heather Whitley, Kris Kulp, Cedric Rocha-Leao, Kirsten Howley, David Alessi, David Martinez, Nathan Kugland.

-Future LLPA meetings will be held at 12:15 PM in Building 123 Conference Room A. We can bring food.

-Brighter Holidays: event was a great success. (See the photo gallery in this issue of Paper/Work.)

- PhD Comics Movie: Screenings on three different dates as detailed on the next page. Jorge Cham will be coming on January 26. Lance will introduce him at 3:00 and a reception will follow at 4:00. We will try to arrange a happy hour afterwards. (Tanim will follow up)

- T-shirt contest: Still on the backburner for moment, but in the coming weeks Lance will request participation by email. We can possibly use postdoc funds if we charge a nominal fee (e.g. $1).

- Next Postdoc Lunch and Happy Hour: Postdoc Lunch will be planned by Nathan, coming soon.

Happy Hour – January 26 after Jorge's reception. We should invite Sandia since they are invited to Jorge's talk. Perhaps go to the Rockhouse?

- Brown Bag Ideas: Transitioning from lab to industry; Getting other managers to come and talk with us; What it's like to consult from within the lab or after we get out; Where are postdocs now? Can we get a bunch of former postdocs to come into the lab who left?; Christine has a document that lists all the previous brown bags that we've had. She'll send us this so we can re-use some that we like. Berni Alder would be a good candidate to have come and talk; also "Old Cold War Dudes," as suggested by Heather.

-Another Postdoc event: Andre will plan an outing to a club in SF/San Jose/Oakland for sometime in Jan/Feb; Cedric will plan a trip to a museum sometime in Jan/Feb

-Newsletter: Nathan will get in touch with Newsline to promote the newsletter and the recent interview with George Miller. Christine says that we now have a DOE-owned camera so that we can take our own pictures. Article idea: postdocs who are parents. Kris can identify these; need someone to interview and assemble the article. Article idea: interview with Parney Albright. Christine will make first contact; Cedric will work on interview prep.

Professional & Career Development

The SUPER awesome Compact Calendar. This is one of the best mid- and long-range time organization tools that I've ever found: it's a simple calendar (Excel or PDF) that shows the whole year in a 1-page format. I use it to track upcoming experiments, conferences, important due dates, holidays & more. *–Nathan Kugland*
http://davidseah.com/compact-calendar/

COMPACT CALENDAR							2012	Experiments	Conferences
#	MONTH	M	T	W	R	F	S	S		
52	January	26	27	28	29	30	31	01		
1		02	03	04	05	06	07	08		Web conference
2		09	10	11	12	13	14	15		
3		16	17	18	19	20	21	22		
4		23	24	25	26	27	28	29		
5	February	30	31	01	02	03	04	05	NIF Experiment?	
6		06	07	08	09	10	11	12	NIF Workshop	
7		13	14	15	16	17	18	19	NIF Workshop	HEDLA abstract due
8		20	21	22	23	24	25	26	OMEGA Experiment	
9	March	27	28	29	01	02	03	04		

Upcoming Events

Physics & Life Sciences Postdoc Research Seminar
Tuesday, January 24, 11 AM
B151 R1209 (Stevenson Room). Refreshments served.
• Jerome Nilmeier (BBTD) "Nonequilibrium candidate Monte Carlo is an efficient tool for equilibrium simulation"
• Fang Qian (BBTD) "Solar-driven microbial electrolysis cell for hydrogen generation"

Ph.D. Comics Movie & Jorge Cham Visit
Three screenings (see below) Jan. 11, 20, and 24
Jorge Cham live on Thursday, Jan. 26; reception follows

High Energy Density Science Seminar Series
Thursday, January 12, 1:00 PM
B481 Auditorium
"Dynamic Compression Science: Recent Advances and New Opportunities," Yogendra M. Gupta, Institute for Shock Physics and Department of Physics, Washington State University

The Ph.D. Comics Movie Comes to LLNL!

Selected Recent Research Publications by LLNL Postdocs

Bold = LLNL Postdoc. *Broadcast your achievements! Make new connections & help show how we are doing collectively.*

Guidelines: 1) Peer-reviewed publications only, nothing in progress; 2) Your affiliation must be LLNL; 3) Note which authors are LLNL postdocs, and in what division & group; 4) Send full citation and title to Nathan (kugland1@llnl.gov).

AEED/Program for Climate Model Diagnosis and Intercomparison: **Zelinka, M. D.**, and D. L. Hartmann (2011), "The observed sensitivity of high clouds to mean surface temperature anomalies in the tropics," J. Geophys. Res., 116, D23103, 2011. doi:10.1029/2011JD016459

Computation/CAR/CASC: Ehsan Totoni, **Abhinav Bhatele**, Eric Bohm, Nikhil Jain, Celso Mendes, Ryan Mokos, Gengbin Zheng, Laxmikant Kale, "Simulation-based Performance Analysis and Tuning for a Two-level Directly Connected System," Proceedings of the 17th IEEE International Conference on Parallel and Distributed Systems, Tainan, Taiwan, December, 2011. LLNL-CONF-500821.

Computation/CAR/CASC: Vivek Kale, **Abhinav Bhatele** and William D. Gropp, "Weighted locality sensitive scheduling for mitigating noise on multicore clusters," Proceedings of the 18th annual IEEE International Conference on High Performance Computing (HiPC), Bangalore, India, December 2011. LLNL-CONF-492091.

Computation/CAR/CASC: Edgar Solomonik, **Abhinav Bhatele**, James Demmel, "Improving communication performance in dense linear algebra via topology aware collectives," Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis (Supercomputing) 2011. LLNL-CONF-491442.

Computation/CAR/CASC: **Abhinav Bhatele**, Nikhil Jain, William D. Gropp and Laxmikant V. Kale, "Avoiding hot-spots on two-level direct networks," Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis (Supercomputing), 2011. LLNL-CONF-491454.

NIF/Photon Science: **Amber L. Bullington**, Paul H. Pax, Arun K. Sridharan, John E. Heebner, Michael J. Messerly, and Jay W. Dawson, "Mode conversion in rectangular-core optical fibers," Appl. Opt. 51, 84-88 (2012)

NSED/Systems & Intelligence Analysis Section/Energy & Earth Systems Group: **John M. Densmore**, Barrie E. Homan, Matthew M. Biss, and Kevin L. McNesby, "High-speed two-camera imaging pyrometer for mapping fireball temperatures," Appl. Opt. 50, 6267-6271 (2011)

PLS/AEED: **Harris E. Mason**, Robert S. Maxwell, Susan A. Carroll, "The formation of metastable aluminosilicates in the Al–Si–H2O system: Results from solution chemistry and solid-state NMR spectroscopy," Geochimica et Cosmochimica Acta 75, 6080-6093 (2011)

PLS/CMMD/Quantum Simulations Group: **André Schleife**, Claudia Rödl, Frank Fuchs, Karsten Hannewald,Friedhelm Bechstedt, "Optical Absorption in Degenerately Doped Semiconductors: Mott Transition or Mahan Excitons?" Phys. Rev. Lett. 107, 236405 (2011)

PLS/CMMD/Quantum Simulations Group: Luiz Cláudio de Carvalho, **André Schleife**, and Friedhelm Bechstedt, "Influence of exchange and correlation on structural and electronic properties of AlN, GaN, and InN polytypes," Phys. Rev. B 84, 195105 (2011)

PLS/CMMD, COMP/CASC, PLS/Physics, WCI/AX Division, and WCI/B Division: Frank R. Graziani, Victor S. Batista, Lorin X. Benedict, John I. Castor, Hui Chen, **Sophia N. Chen**, Chris A. Fichtl, James N. Glosli, Paul E. Grabowski, **Alexander T. Graf**, Stefan P. Hau-Riege, Andrew U. Hazi, **Saad A. Khairallah**, Liam Krauss, A. Bruce Langdon, Richard A. London, Andreas Markmann, Michael S. Murillo, David F. Richards, Howard A. Scott, Ronnie Shepherd, **Liam G. Stanton**, Fred H. Streitz, Michael P. Surh, Jon C. Weisheit, and **Heather D. Whitley**, "Large-scale molecular dynamics simulations of dense plasmas: The Cimarron Project," High Energy Density Physics 8, 105-131 (2012).

Selected Recent Research Publications by LLNL Postdocs, Continued

PLS/CMMD/Quantum Simulations Group: **Heather D. Whitley**, **Jonathan L. DuBois**, and K. Birgitta Whaley, "Theoretical Analysis of the Anomalous Spectral Splitting of Tetracene in 4-He Droplets," J. Phys. Chem. A 115, 7220-7233 (2011).

PLS/CSD: **Mayer, BP; Lewicki, JP**; Weisgraber, TH; Small, W; Chinn, SC; Maxwell, RS, "Linking Network Microstructure to Macroscopic Properties of Siloxane Elastomers Using Combined Nuclear Magnetic Resonance and Mesoscale Computational Modeling," Macromolecules, 2011, 44, 8106-8115.

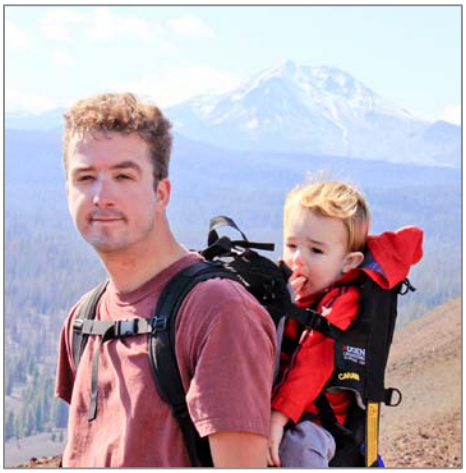
PLS/CSD/Glenn T. Seaborg Institute: **Benjamin Jacobsen**, Jennifer Matzel, Ian D. Hutcheon, Alexander N. Krot, Qing-Zhu Yin, Kazuhide Nagashima, Erick C. Ramon, Peter K. Weber, Hope A. Ishii, and Fred J. Ciesla, "Formation Of The Short-Lived Radionuclide 36Cl In The Protoplanetary Disk During Late-Stage Irradiation Of A Volatile-Rich Reservoir," Astrophysical Journal Letters 731 L28, 2011

PLS/Fusion Energy Sciences Program: **A.N. James**, M.E. Austin, N. Commaux, N.W. Eidietis, T.E. Evans, E.M. Hollmann, D.A. Humphreys, A.W. Hyatt, V.A. Izzo, T.C. Jernigan, R.J. La Haye, P.B. Parks, E.J. Strait, G.R. Tynan, J.C. Wesley and J.H. Yu, "Measurements of hard x-ray emission from runaway electrons in DIII-D," Nucl. Fusion 52 013007, 2012

PLS/Physics: **Lance M. Simms**, "Autonomous subpixel satellite track end point determination for space-based images," Appl. Opt. 50, D1-D6 (2011)

Meet the Postdoc Association Leadership Council

Cedric Rocha-Leao simulates material properties and loves hiking around California



Hi! My name is Vilem. The guy carrying me on his back is Cedric, my horse—I mean, daddy. It seems like he is a physicist and he works on quantum simulations of electronic and structural properties of materials. At the Lab, he has been working on getting cost effective semiconductors to work at room temperature as accurate gamma radiation detectors. I have no clue what this means, but it keeps milk flowing into my bottle.

I am all star spangled, but daddy is from Brazil, although he can't samba and is terrible at soccer. He started getting involved with the Postdoc association at the lab exactly because foreigners over there play by different rules, which he thought he could help fine tune. Then he also started participating at the Institutional Postdoc board, where he is the only postdoc among representatives from every division at the lab. He introduces the speakers at the PLS postdoc seminars, helps put this newsletter together and floods your email boxes with miscellaneous stuff. When he has a break, he likes to go out and see how beautiful California is. Don't ask me when he does the job he's actually paid to do! As if I didn't keep him too busy already...

LLNL Postdoc Association Leadership Council

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Nathan Kugland, Andre Schleife, Cedric Rocha-Leao

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